REMARKS

Claims 1, 3-8, and 12 are currently pending in this application. Applicants recognize and appreciate the Examiner's withdrawal of the claim rejections under 35 U.S.C. § 112, second paragraph. The claims are now currently rejected only under 35 U.S.C. § 103(a) over the two cited references in combination.

Amendments to the Specification

With this amendment, Applicants have corrected an obvious typographical error in Table 1 on page 20. The entry for the particle size of raw material in comparative example 1 should read 4.0, not 1.1. This amendment is supported by the original specification at page 19, paragraph [0069], line 2 and, accordingly, the amendment adds no new matter to this application.

Rejections Under 35 U.S.C. § 103(a)

The Examiner rejects claims 1, 3, 6-8, and 12 under 35 U.S.C. § 103(a) as obvious over U.S. Patent No. 5,587,010 to Shibasaki et al. in view of U.S. Patent No. 6,197,277 to Fukuda et al. Specifically, the Examiner believes that Shibasaki et al. teaches flaky alumina particles with a diameter and thickness of less than 1 μm capable of achieve an aspect ratio of at least 100, while Fukuda et al. teaches alumina particles made with phosphate compounds and possessing certain zeta potentials. The Examiner then combines these teachings to render obvious the cited claims. Applicants respectfully traverse this rejection.

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To establish a *prima facie* case of obviousness, the Examiner must prove not only that the prior art references, either separately or in combination, teach or suggest all the claim limitations, but also that the references provide some motivation to modify or combine their teachings. *See* MPEP § 2143. Applicants submit that one of ordinary skill in the art, even in consideration of generally available knowledge, would not be motivated to modify Shibasaki et al. to achieve the claimed invention. Therefore, this reference does not teach all the claim limitations. Further, any combination of its teachings with those of Fukuda et al. does not remedy these deficiencies.

As noted by the Examiner in the recent Office Action, Applicants have previously argued that the alumina particles disclosed by Shibasaki et al. would not possess the claimed aspect ratio. Specifically, Examples 1 and 2 note that both particle size and thickness share a proportional relationship to temperature and pressure during production (column 4, lines 15-19 and lines 36-40). Figures 1 and 2 also graphically display the relationship of particle diameter to treatment temperature and pressure. As a result, one of ordinary skill in the art, reading the disclosure of Shibasaki et al., would understand that any change in particle size or diameter would be met with a corresponding change in particle thickness.

Example 3 of Shibasaki et al. then reveals alumina particles with a thickness of about 0.1 μm and a diameter of about 1.0 μm produced from a temperature of 600 °C and a pressure of 200 kg/cm^2. Shibasaki et al. did not choose these production parameters by chance. The pressure of 200 kg/cm^2 represents the upper limit of its production process, as any greater pressure results in "thick and coarse" particles (column 3, lines 12-14). The lower limit is 50 kg/cm^2 (column 3, line 15). The

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temperature of 600 °C apparently represents the upper limit of their testing apparatus, at least as is reasonably apparent from Figure 1. The lower limit is 350 °C because "no α-alumina can be obtained when the temperature is below 350 °C" (column 3, lines 1-6). Thus, Example 3 represents the maximum production temperature and pressure capable of producing flaky α-alumina particles in the Shibasaki et al. process, at least given the testing apparatus used in the reference.

Applicants and the Examiner agree that the alumina particles in Example 3 of Shibasaki et al. would have an aspect ratio, according to the present specification, of about 10. Following the graph of Figure 1, if the temperature of the treatment process is decreased from its maximum of 600 °C, particle diameter decreases. Given the statement in Example 1, particle thickness should also decrease. Following the graph of Figure 2, if the pressure of the treatment process is decreased from its maximum of 200 kg/cm^2, particle diameter decreases. Given the statement in Example 2, particle thickness should also decrease. One of ordinary skill would thus read Shibasaki et al. to disclose that any decrease in production temperature or pressure results in both smaller and thinner particles. Therefore, the aspect ratio of these particles would remain essentially the same and certainly not reach the range of the pending claims, over five times greater than those disclosed in the reference.

Contrary to the Examiner's statements otherwise, such a reading of Shibasaki et al. does not limit consideration of that reference only to its preferred embodiments or working examples. No disclosure in Shibasaki et al. points to any modifications of its process that would enable one of ordinary skill in the art to practice its process and

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achieve alumina particles with a significantly greater aspect ratio than 10. Shibasaki et al. specifically teaches away from the prior art production of particles with a size "of from several microns to several hundred microns" in an effort to achieve "alumina particles of the order of submicron suitable as a raw material for fine ceramics" (column 2, lines 9-18). Therefore, even with the maximum desired particle size of 1.0 μm, the particle thickness would have to be less than 0.018 μm to achieve even a aspect ratio of just 55, the lower value of the claimed range. Shibasaki et al. simply never discloses how to achieve such a disproportionately low particle thickness given the explicit upper limits on particle size and never provides any motivation to modify its teachings to achieve a high aspect ratio like that of the pending claims.

On the other hand, Applicants discuss the aspect ratio and its importance to the claimed invention throughout the specification (*see* at least paragraphs [0014], [0029], and [0030]). Even more significantly, in paragraph [0043] on page 13, Applicants state that particles with an average thickness of less than 0.01 μm crumble during the production of a cosmetic product. This disclosure excludes and teaches away from a large range of particle thicknesses from Shibasaki et al. that could possibly meet the claimed aspect ratio. While this fact is not determinative in the obviousness determination, Applicants believe that it tends to show and reinforces the argument that Shibasaki et al. does not teach the claimed aspect ratio and provides absolutely no motivation to achieve it.

The Examiner cites *In re Aller*, 220 F.2d 454 (C.C.P.A. 1955) in support of motivation to modify Shibasaki et al. to achieve the pending claims, yet Applicants believe that its holding is inapplicable when applied to the instant rejection (*see* MPEP

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§ 2143.03 (stating that "legal precedent can provide the rationale supporting obviousness only if the facts in the case are sufficiently similar to those in the application")). The Examiner states the case holds that "where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art" (Office Action of October 20, 2003, page 5). The "general conditions" of *Aller* were process recitations on temperatures and acid concentrations used to produce phenol, the claimed product. 220 F.2d at 455. On the other hand, the particle diameter and aspect ratio cited here in the pending claims are attributes of claimed product itself, not of the process used to create the product. Thus, there are no "general conditions" of a process such that routine skill in the art would lead to discovery of the claimed invention. As a result, Applicants believe *In re Aller* does not support an obviousness rejection of the pending claims over Shibasaki et al.

Fukuda et al. goes no further in providing motivation to achieve the claimed invention. The reference specifically limits the aspect ratio of its particles to between 15 and 50 (*see* abstract and claim 1). Therefore, Fukuda et al. does not add any teaching and certainly no motivation to achieve an aspect ratio of 55 to 2000. Whatever disclosure concerning zeta potential and phosphate addition that Fukuda et al. may add to Shibasaki et al. does not provide any further support for these references combining to achieve the claimed invention and recited aspect ratio.

In sum, Applicants submit that Shibasaki et al. cannot support a *prima facie* case of obviousness because it neither teaches the claimed aspect ratio nor provides any motivation to modify its teachings to achieve the claimed aspect ratio. Further, one of ordinary skill in the art reading that reference in view of Fukuda et al. still would have no

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motivation to create alumina particles with the claimed aspect ratio. Applicants therefore respectfully believe that the rejection should be withdrawn.

Conclusion

In view of the foregoing amendments and remarks, Applicants respectfully request the reconsideration and the continued examination of this application and the timely allowance of the pending claims.

Please grant any extensions of time required to enter this response and charge any additional required fees to our Deposit Account 06-0916.

Respectfully submitted,

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Dated: January 20, 2004

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